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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Liebert et al.
Serial No: Not Yet Assigned
Filed: Herewith
For: DOSE MONITOR FOR PLASMA DOPING SYSTEM
Examiner: Not Yet Assigned
Art Unit: Not Yet Assigned

BOX REISSUE PATENT APPLICATION
COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

PRELIMINARY AMENDMENT AND REQUEST FOR INTERFERENCE

Dear Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS

Please add the following new claims:

41. (New) An ion implantation system for causing ions to impact an implantation surface comprising:

a process chamber defining a chamber interior into which one or more workpieces can be inserted for ion treatment;

an energy source for setting up an ion plasma within the process chamber;

a support for positioning one or more workpieces within an interior region of the process chamber so that an implantation surface of the one or more workpieces is positioned within the ion plasma;

a pulse generator in electrical communication with the workpiece support for applying electrical pulses for attracting ions to the support;

one or more dosimetry cups including an electrically biased ion collecting surface parallel to the implantation surface; and

an implantation controller for monitoring signals from the one or more dosimetry cups to control ion implantation of the one or more workpieces.

42. (New) The ion implantation system of claim 41 wherein the one or more dosimetry cup have generally circular apertures.

43. (New) The ion implantation system of claim 41 further including multiple dosimetry cups with apertures forming a sector ring shape.

44. (New) The ion implantation system of claim 41 wherein signals from the dosimetry cup that are used by the controller are derived from electric current through the collecting surface of the dosimetry cup.

45. (New) The ion implantation system of claim 41 wherein the parameter of the ion implantation process controlled is the duration of the implantation of the workpiece.

46. (New) The ion implantation system of claim 41 wherein the dosimetry cups are imbedded in the workpiece support to eliminate stray capacitance to ground thereby avoiding displacement current errors.

REMARKS

The present application is an application for reissue of U.S. Patent No. 6,020,592, granted on February 1, 2000. Claims 1-40 in the present application (filed herewith) are identical to claims 1-40 of U.S. Patent No. 6,020,592. New claims 41-46 are being added with this amendment. Support for the new claims 41-46 is provided below. No new matter has been added. Claims 1-46 are now pending in the present application.

Request for Interference Pursuant to 37 CFR §1.607 and Showing Pursuant to 37 CFR §1.608

Applicant hereby requests that an interference be declared between new claims 41-46 of the present application and U.S. Patent No. 6,050,218 ('218 patent) to Chen et al.

New claim 41 is identical to claim 1 of the '218 patent. New claim 41 is fully supported by the disclosure of this application as provided below.

New claim 42 is identical to claim 3 of the '218 patent. New claim 42 is fully supported by the disclosure of this application as provided below.

New claim 43 is identical to claim 4 of the '218 patent. New claim 42 is fully supported by the disclosure of this application as provided below.

New claim 44 is identical to claim 14 of the '218 patent. New claim 44 is fully supported by the disclosure of this application as provided below.

New claim 45 is identical to claim 15 of the '218 patent. New claim 45 is fully supported by the disclosure of this application as provided below.

New claim 46 is identical to claim 16 of the '218 patent. New claim 46 is fully supported by the disclosure of this application as provided below.

Request for Interference

Pursuant to 37 CFR §1.607, Applicant requests that an interference be declared between the present application, as amended, and the '218 patent.

1. Identification of Patent

Pursuant to 37 CFR §1.607(a)(1), Applicant identifies U.S. Patent No. 6,050,218.

2. Proposed Count for Interference

Pursuant to 37 CFR §1.607(a)(2), Applicant presents the following proposed count 1 for purposes of the interference:

PROPOSED COUNT 1

1. An ion implantation system for causing ions to impact an implantation surface comprising:

a process chamber defining a chamber interior into which one or more workpieces can be inserted for ion treatment;

an energy source for setting up an ion plasma within the process chamber;

a support for positioning one or more workpieces within an interior region of the process chamber so that an implantation surface of the one or more workpieces is positioned within the ion plasma;

a pulse generator in electrical communication with the workpiece support for applying electrical pulses for attracting ions to the support;

one or more dosimetry cups including an electrically biased ion collecting surface parallel to the implantation surface; and

an implantation controller for monitoring signals from the one or more dosimetry cups to control ion implantation of the one or more workpieces.

3. Identification of Claims in the '218 Patent Corresponding to the Proposed Count

Pursuant to 37 CFR §1.607(a)(3), Applicant identifies the following claims in the '218 patent that correspond to the proposed count: claims 1 through 17 correspond to the proposed count.

Claim 1 in the '218 patent is identical to the proposed count, and therefore corresponds to the proposed count. Claims 2 through 17 depend from claim 1. The limitations in claims 2-17 are obvious in view of claim 1. Therefore, claims 2-17 also correspond to the proposed count.

4. Claims in this Application Corresponding to the Proposed Count

Pursuant to 37 CFR §1.607(a)(4), Applicant submits that at least new claims 41-46 in the present application correspond to the proposed count.

Claim 41 is identical to the proposed count, and therefore corresponds to the proposed count. The limitations in claims 42-46 are obvious in view of claim 41. Therefore, claims 42-46 also correspond to the proposed count.

5. Support for Claims in the Present Application as Corresponding to the Proposed Count

Pursuant to 37 CFR §1.607(a)(5), Applicant applies the terms of claims 41-46 to the disclosure of this application as follows:

ELEMENTS OF APPLICATION CLAIMSClaim 41

- A. An ion implantation system for causing ions to impact an implantation surface comprising:
- B. a process chamber defining a chamber interior into which one or more workpieces can be inserted for ion treatment
- C. an energy source for setting up an ion plasma within the process chamber;
- D. a support for positioning one or more workpieces within an interior region of the process chamber so that an implantation surface of the one or more workpieces is positioned within the ion plasma;
- E. a pulse generator in electrical communication with the workpiece support for applying electrical pulses for attracting ions to the support;
- F. one or more dosimetry cups including an electrically biased ion collecting surface parallel to the implantation surface; and
- G. an implantation controller for monitoring signals from the one or more dosimetry cups to control ion implantation of the one or more workpieces.

SUPPORT IN APPLICATION

Column 1, lines 5-6; plasma doping system (Fig. 1)

Column 4, lines 34-36; Column 5, lines 16-18; chamber 10, enclosed volume 12, plasma 40, wafer 20 (Fig. 1)

Column 12, lines 13-15 (claim 36, as filed); Column 8, lines 2-6; Column 1, lines 43-45

Column 4, lines 35-36; Column 5, lines 18-23; platen 14 (Fig. 1)

Column 4, lines 50-52; Column 5, lines 16-25; pulse generator 30 (Fig. 1)

Column 5, lines 34-38; Column 6, lines 50-53; Faraday cups 50, 52 (Fig. 1); Note: the terms "dosimetry cup" and "Faraday cup" are used synonymously in the art (e.g., See '218 patent, Col. 2, line 12 and Col. 2, line 66)

Column 5, lines 44-45 and lines 57-60; Column 6, lines 23-33; Column 2, lines 20-32; dose processor 70 (Fig. 1)

Claim 42

The ion implantation system of claim 41 wherein the one or more dosimetry cup have generally circular apertures.

Faraday cups 50, 52 (Figs. 1, 2)

Claim 43

The ion implantation system of claim 41 further including multiple dosimetry cups with apertures forming a sector ring shape.

Faraday cups 50, 52 (Figs. 1-3)

Claim 44

The ion implantation system of claim 42 wherein signals from the dosimetry cup that are used by the controller are derived from electric current through the collecting surface of the dosimetry cup.

Column 6, lines 14-16; Column 2, lines 30-32

Claim 45

The ion implantation system of claim 42 wherein the parameter of the ion implantation process controlled is the duration of the implantation of the workpiece.

Column 2, lines 29-32

Claim 46

The ion implantation system of claim 42 wherein the dosimetry cups are imbedded in the workpiece support to eliminate stray capacitance to ground thereby avoiding displacement current errors.

Column 5, lines 61-67, cups 50, 52, 54, 56 positioned in guard ring 66 (Figs. 1 and 2)

6. No Showing is Required Pursuant to 37 CFR §1.607(a)(6)

The requirements of 35 U.S.C. 135(b) are met by claims 41-46 of the present application because claims 41-46 were submitted in this application less than one year after the issuance of the '218 patent, which issued on April 18, 2000.

7. Compliance with 37 CFR §1.608(a)

Because the effective filing date of the present application precedes the filing date of the '218 patent (and therefore has an effective filing date three months or less after the filing date of the '218 patent), there is a basis upon which the Applicant is entitled to a judgement relative to the patentee.

8. Applicant is Entitled to Senior Party Status

The present application has a filing date of August 3, 1998. Claims 41-46 are supported by the present application as indicated above. Accordingly, the priority date to which this application and new claims 41-46 are entitled is August 3, 1998.

The '218 patent was filed on September 28, 1998. Accordingly, the priority date to which the '218 patent and claims 1-17 are entitled is September 28, 1998.

Because Applicant's priority date is before the priority date of the '218 patent, Applicant respectfully submits that Applicant should be designated senior party in the requested interference.

CONCLUSION

In view of the foregoing, Applicant respectfully submits that the claims presented in this amendment are in condition for allowance, since they have already been allowed in U.S. Patent No. 6,050,218.

It is respectfully requested that the Examiner forward this application to the Board of Patent Appeals and Interferences with the statement that an interference should be declared on the basis of proposed count 1 and claims 41-46 of this application, and claims 1-17 of the '218 patent.

Please charge any fee or any fee deficiency occasioned by this preliminary amendment to
Deposit Account No. 50-0896.

Respectfully submitted,

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